

REMARKS

This amendment responds to the final office action mailed January 18, 2007. In the office action the Examiner:

- rejected claims 30-58 and 89 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter
- rejected claims 1-90 under 35 U.S.C. 102(e) as being anticipated by Barg et al (U.S. Patent No. 6,707,454).
- rejected claims 1,30 and 59 under 35 U.S.C. 102(e) as being anticipated by Applicant Admitted Prior Art (AAPA) of the Instant Application.
- rejected claims 1, 30 and 59 under 35 U.S.C. 102(a) as being anticipated by Stolte et al., Polaris, included in Applicant's IDS.

After entry of this amendment, the pending claims are: claims 1-6, 8-9, 15-35, 37-38, 44-64, 66-67, and 73-93. Claims 7, 10-14, 36, 39-43, 65, and 68-72 have been canceled.

Phone Interview with the Examiner

The Applicants thank the Examiner for having a phone interview with the Applicants' representatives, Doug Crisman (Reg. No. 39951) and Yalei Sun (Reg. No. 57765), on May 10, 2007. During the phone interview, the Applicants' representatives described at least one key distinction between the pending claims and the three references cited by the Examiner, i.e., splitting different levels of a dimension attribute of a hierarchical dataset into multiple axes of a visual plot, and observed that none of the references disclose such limitation.

The Examiner made the following suggestions:

- Amend claim 30 to emphasize the executability of the instructions in the computer program mechanism to overcome the rejections under 35 U.S.C. §101; and
- Further clarify the definition of the term "dimension" recited in the pending claims.

Claim Amendments

With this amendment, the Applicants have amended claim 1 to further recite a method of forming a visual plot by associating a first level from a plurality of levels of a dimension attribute with a first axis of the visual plot and a second level from the plurality of levels with a second axis of the visual plot, wherein the two axes have different orientations. The

Applicants appended the terms “measure” and “dimension” with the term “attribute” to further clarify their meanings. Independent claims 30 and 59 have been amended accordingly. The Applicants also amend other dependent claims to correct typographical errors and provide necessary antecedent bases for claim elements therein.

No new matter is added.

Claim Rejections – 35 USC §101

The preamble of the amended claim 30, in pertinent part, reads as follows:

“... the computer program product comprising **a computer readable storage medium and a computer program mechanism embedded therein**, ..., **the computer program mechanism comprising instructions that, if executed by the computer system, cause the computer system to:**” (emphasis added).

Claim 30 recites that the computer program mechanism includes at least three sets of instructions executable by a computer system to (i) construct a visual plot based on a specification, (ii) query a dataset to retrieve data in accordance with the specification, and (iii) populate the visual plot with the retrieved data. Thus, the Applicants respectfully submit that the Examiner withdraw the rejections under 35 U.S.C. §101.

Claim Rejections – 35 USC §102(e)

The Barg Patent

Claim 1 is directed to a method of forming a visual plot from a dataset having a hierarchical structure. The dataset includes a measure attribute (i.e., a quantitative attribute) and a multi-level hierarchical dimension attribute (i.e., a charactering attribute). See, e.g., page 2, lines 29-34 of the specification. The visual plot is populated with retrieved data by associating a first level from a plurality of levels of the dimension attribute with a first axis of the visual plot and a second level from the plurality of levels with a second axis of the visual plot. In particular, the first axis and the second axis have different orientations in a space.

An embodiment of what is recited in claim 1 is described in the specification (e.g., page 40, line 20 – page 41, line 20 in connection with Fig. 20). Fig. 20 depicts a visual plot 2000 of a multidimensional dataset. The dataset has a measure attribute “sales” and a multi-level hierarchical dimension attribute “time.” The “time” dimension attribute has at least three levels, “month”, “quarter”, and “year”. The first axis (i.e., y-axis) of the visual plot 2000 is associated with the “year” level of the “time” dimension attribute and the second axis

(i.e., x-axis) of the visual plot 2000 is associated with the “quarter” and “month” levels of the “time” dimension attribute.

In contrast, Barg does not teach or suggest that the first and second levels of a dimension attribute like the “time” dimension attribute can appear on two **different** layers or axes of a visual plot. All the figures of Barg show that the two levels of the product attribute, the higher level “product type” such as tea and the lower level “product” such as green tea, are actually on the same axis of a visual plot. The flowchart in Fig. 24 of Barg cited by the Examiner teaches that multiple dimensions may be combined to create a row or column axis (col. 26, lines 15-17 of Barg). But it does not disclose that two hierarchical levels of the same dimension attribute can appear at multiple axes of the same visual plot that have different orientations.

In the office action mailed January 18, 2007, the Examiner argued that Barg teaches that multiple dimensions are used to create a row or column axis. But as noted above, this feature means that multiple dimensions such as “product type” and “product” appear on the **same axis** of a visual plot. Therefore, Barg discloses a **many-to-one** relationship between different dimensions and a particular horizontal axis (note that Barg teaches a 3-D plot that has two horizontal axes).

Claim 1 recites a feature of splitting two different levels of the same dimension across multiple axes of the visual plot. One skilled in the art will appreciate that this configuration is equivalent to a **one-to-many** relationship between a multi-level dimension attribute and different axes of the visual plot.

Therefore, claim 1 and its dependent claims are not anticipated by Barg. Since claims 30 and 59 are respective computer program product claim and computer system claim that substantially correspond to claim 1, claims 30 and 59 as well as their respective dependent claims are not anticipated by Barg for at least the same reasons mentioned above.

The Pivot-Table Interface

Contrary to the Examiner’s assertion, the Applicants cite the Pivot-Table interface as shown in Fig. 18 of the present application to emphasize the limitations that have been overcome by the present invention. The relevant paragraphs in the background section read as follows:

“Such interfaces (referring to Figs. 17 and 18) restrict the construction of the table so that **levels (e.g., year and quarter) from a single dimension must appear on the same axis** (e.g., the rows or columns) and must be in their natural hierarchical order.”
(Emphasis Added)

As noted above, claim 1 has been amended to further clarify that the first and second axes of the visual plot have different orientations in a space. Therefore, the Pivot-Table interface does not have the feature of allowing two levels from a single dimension to appear on two different axes, which is recited in claim 1.

In the office action mailed January 18, 2007, the Examiner argued that the Pivot-Table interface teaches data of **different dimensions** can be copied on rows. But the Pivot-Table interface does not teach or suggest that **two different levels from the same dimension attribute** appear on two different axes of a visual plot. Thus, the Applicants respectfully submit that claims 1, 30, and 59 are not anticipated by the Pivot-Table interface reference.

Claim Rejections – 35 USC §102(a)

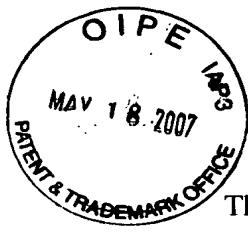
The Polaris Reference

The Examiner rejected claims 1, 30 and 59 under 35 U.S.C. 102(a) as being anticipated by Stolte et al., Polaris, included in Applicants' IDS. Applicants respectfully disagree.

All independent claims 1, 30, and 59 recite a dataset having a hierarchical structure. But both Polaris-based publications by the Applicants expressly states that Polaris was not able to handle a dataset having a hierarchical structure, which was deemed to be a project for the future at the time the publications were published:

We have many plans for extending this system. **The current version of Polaris does not leverage the hierarchical structure of many multi-dimensional databases.** Section 8, 2nd paragraph, of an article entitled “Polaris: A System for Query, Analysis and Visualization of Multi-dimensional Relational Databases” by Stolte and Hanrahan, *Proceedings of the Sixth IEEE Symposium on Information Visualization*, October 2000.

We have many plans for future work in extending this system. As stated above, one area of future work is exploring database performance issues. **A related area is expanding Polaris to expose the hierarchical structure of data cubes.** Section 9, 2nd paragraph of an article entitled “Polaris: A System for Query, Analysis and Visualization of Multi-dimensional Relational



Databases" by Stolte et al., *IEEE Transactions on Visualization and Computer Graphics*, Vol. 8, No. 1, January 2002.

Thus, the Polaris reference cannot anticipate any of the pending claims because they are all related to forming a visual plot from a dataset having a hierarchical structure.

In light of the above amendments and remarks, the Applicant respectfully requests that the Examiner reconsider this application with a view towards allowance. The Examiner is invited to call the undersigned attorney at (650) 843-4000, if a telephone call could help resolve any remaining items.

Respectfully submitted,

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